FUJITSU MICROELECTRONICS
SUPPORT SYSTEM

SS01-71089-1E

DSU-FR EMULATOR

QFP-100P HEADER TYPE 2

MB2198-122-E

OPERATION MANUAL

FUJITSU

PREFACE

Thank you for purchasing the QFP-100P header type 2 (MB2198-122-E) for the DSU-FR emulator. The QFP-100P header is used by the adapter unit to connect the DSU-FR emulator (MB2198-01-E) to the user system. that uses a Fujitsu FR *1 family MB91260 series microcontroller (QFP-100P *2). This manual explains how to handle the QFP-100P header type 2 for the DSU-FR emulator.
Please contact the sales or support representative for details on the mass production and evaluation MCU models that can be used with this product.

*1 : FR, the abbreviation of FUJITSU RISC controller, is a line of products of FUJITSU MICRO-ELECTRONICS Limited.

*2 : The lead pitch of the package (FPT-100P-M06) is 0.65mm and the body size is 14mm × 20mm.

■ Handling and use

The handling and use of this product and notes regarding safety are included in the operation manual of the DSU-FR emulator.
Follow the instructions in the operation manual “DSU-FR EMULATOR MB2198-01-E OPERATION MANUAL” for the use of this product.

■ European RoHS compliance

Products with a -E suffix on the part number are European RoHS compliant products.

■ Notice on this document

All information included in this document is current as of the date it is issued. Such information is subject to change without any prior notice.
Please confirm the latest relevant information with the sales representatives.

■ Caution of the products described in this manual

The following precautions apply to the product described in this manual.

⚠ **CAUTION**	Indicates a feature that, if not used correctly, may result in minor or moderate injuries, and which may cause the customer system to malfunction.

Cuts	The product has some sharp-pointed or edged parts inevitably exposed, such as jumper plugs. Use meticulous care in handling the product not to get injured with such pointed parts.
Damage	When connecting the header board to the user system, correctly position the index mark (▲) on the NQPACK mounted on the user system with the index mark (▼) on the header board, otherwise the emulator and user system might be damaged.
Damage	When mounting a mass production MCU, correctly position pin 1, otherwise the mass production MCU and user system might be damaged.

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1. Checking the Delivered Product

Before using the QFP-100P header type 2, confirm that the following components have been included in the box:

- QFP-100P header board*1 : 1
- Screws for securing header board (M2 × 10mm, 0.4mm pitch) : 4
- Washers : 4
- NQPACK100RB179-A*2 : 1
- HQPACK100RB179*3 : 1
- Operation manual (Japanese version) : 1
- Operation manual (English version, this manual) : 1

*1 : Referred to as “header board”. Header board is mounted on YQPACK100RB-4W (Tokyo Eletech Corporation), referred to as “YQPACK”.

*2 : IC socket manufactured by Tokyo Eletech Corporation, referred as “NQPACK”, and supplied with a special screwdriver and three guide pins. A socket offering higher reliability, NQPACK100RB179-SL-A (Tokyo Eletech Corporation, sold separately), can be used by making an IC socket mounting hole on the user system board. For more information, contact Tokyo Eletech Corporation.

*3 : IC socket cover manufactured by Tokyo Eletech Corporation, referred to as “HQPACK”, with four screws for securing HQPACK (M2 × 6mm, 0.4mm pitch).

To use this product, follow the instructions shown in the adapter unit with “DSU-FR EMULATOR PGA-401P ADAPTER ” (sold separately).
Please contact the sales or support representative for details on the adapter that can be used with this product.

2. Handling Precautions

The adapter unit is precision-manufactured to improve dimensional accuracy and to ensure reliable contact. The header board is therefore sensitive to mechanical shock. To ensure correct use of the header board in the proper environment, observe the following points regarding its insertion and removal:

- Avoid placing stress on the NQPACK mounted on the user system board while connecting the adapter unit.

3. Notes on Designing

■ Restrictions of PC board for the user system

Once the header board is connected to the user system, the heights of parts mounted in the space around the header board are restricted.
The PC board of the user system must be designed with due consideration given to this restriction (Figure 1).

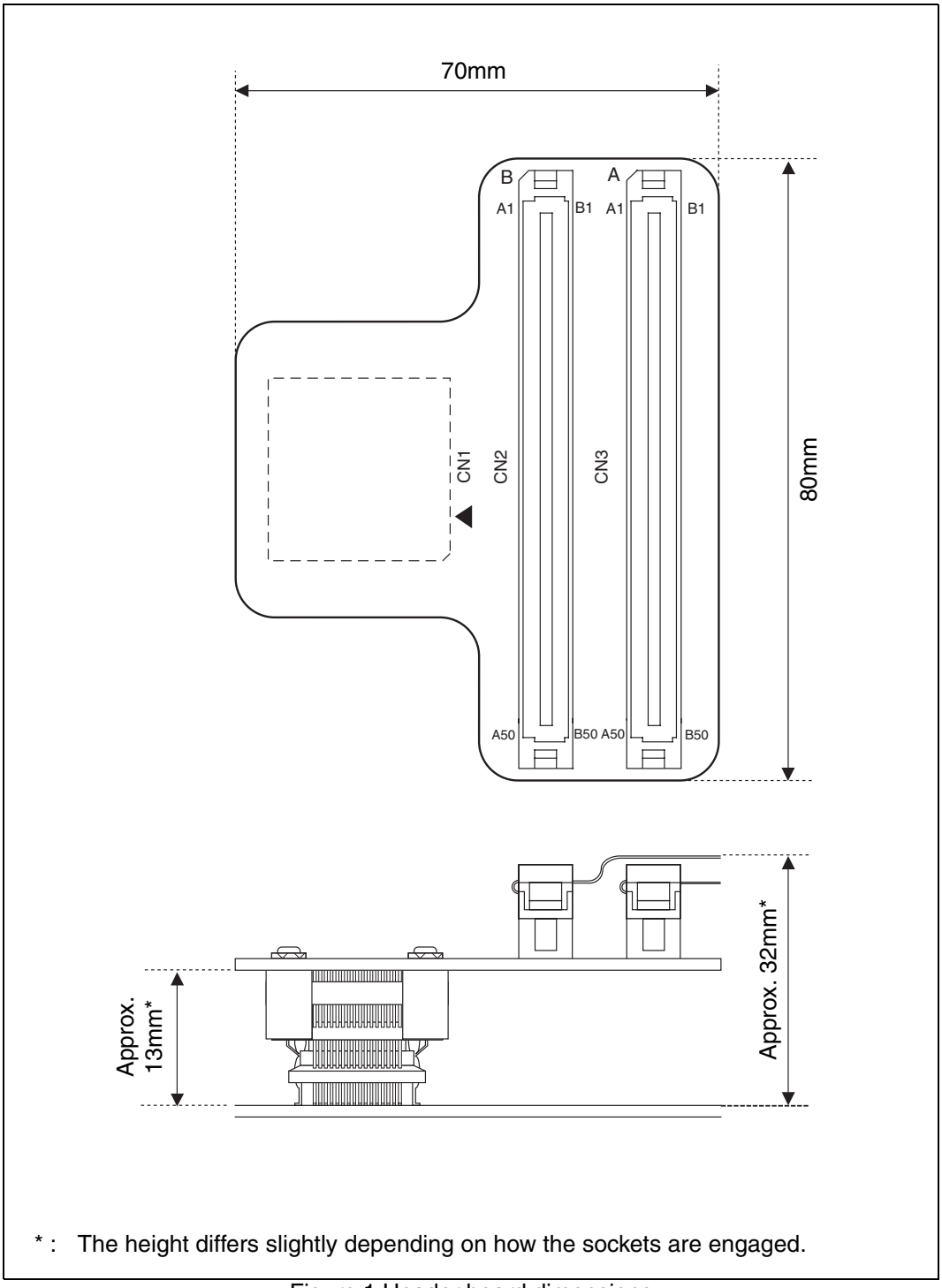

Figure 1 Header board dimensions

■ MCU footprint design notes

Figure 2 shows the recommended dimensions of the NQPACK footprint mounted on the PC board of the user system.

The PC board of the user system must be designed with due consideration given to this footprint as well as to the mass production MCU. For more information, contact the Tokyo Eletech Corporation.

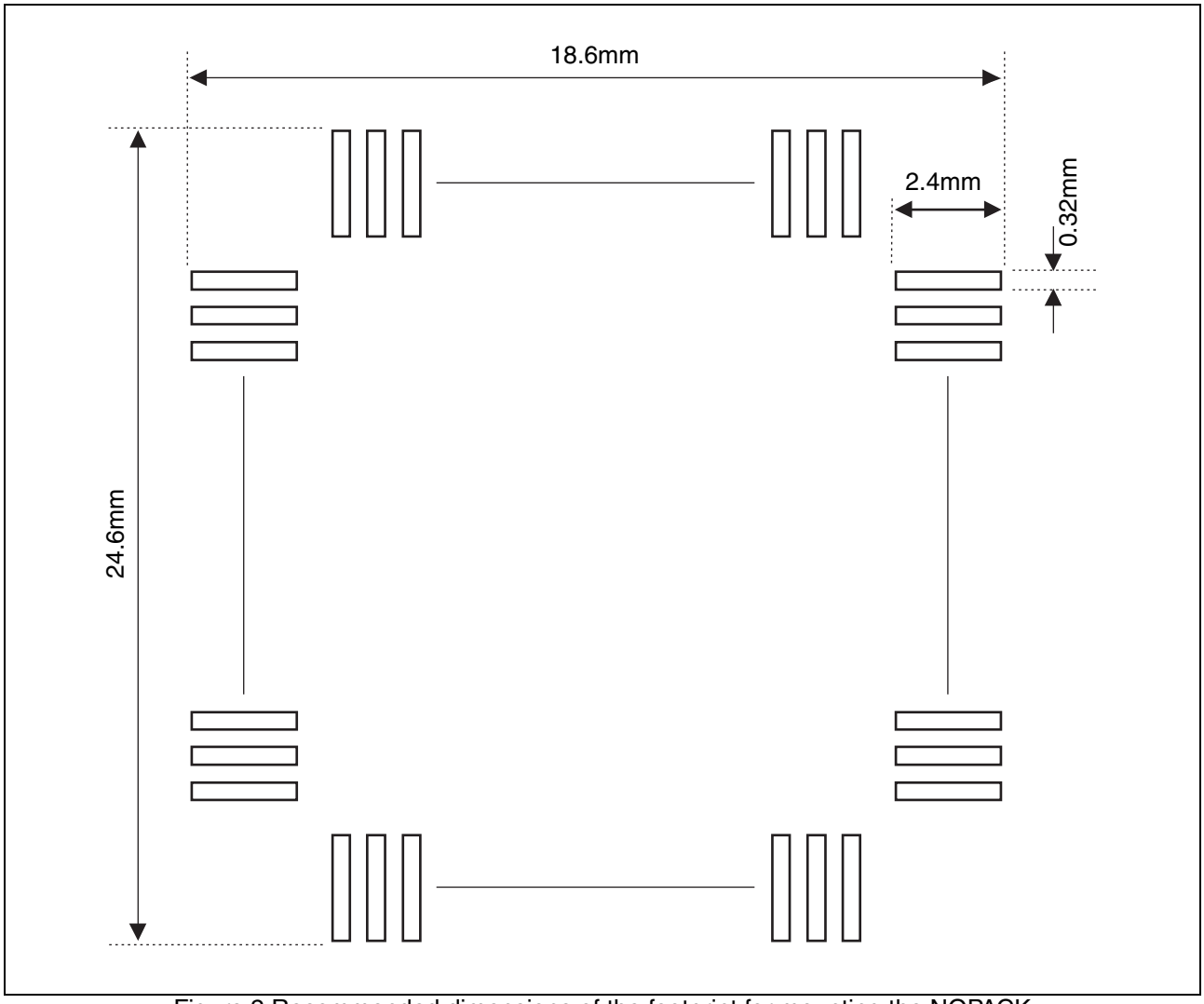

Figure 2 Recommended dimensions of the footprint for mounting the NQPACK

4. Procedure for Connecting the User System

■ Connection

Before using the QFP-100P header, mount the supplied NQPACK on the user system. To connect the header board to the adapter unit, use the flat cables (two lines) supplied by the adapter unit sold separately. Refer to the hardware manuals of each adapter unit about the way to connect.

1. To connect the header board to the user system, match the index mark (▲) on the NQPACK mounted on the user system with the index mark (▼) on the header board (see Figure 3), and then insert it. Next, secure the header board with four screws (see Figure 4).
   The pin of YQPACK is thin and easy to bend. Insert NQPACK after confirm that the pin of YQ-PACK is not bent.
2. Insert each header board mounting screw for header board in each of the four screw holes on the header board through a washer, and then first tighten the screws in opposing corners followed by the two remaining screws. To tighten the screws, use the special screwdriver supplied with the NQPACK to finally tighten the four screws in sequence. Tightening the screws too tight might result in a defective contact.
3. After the header board is connected to the user system, connect to the adapter board.
   Refer to the adapter board operation manual in detail.

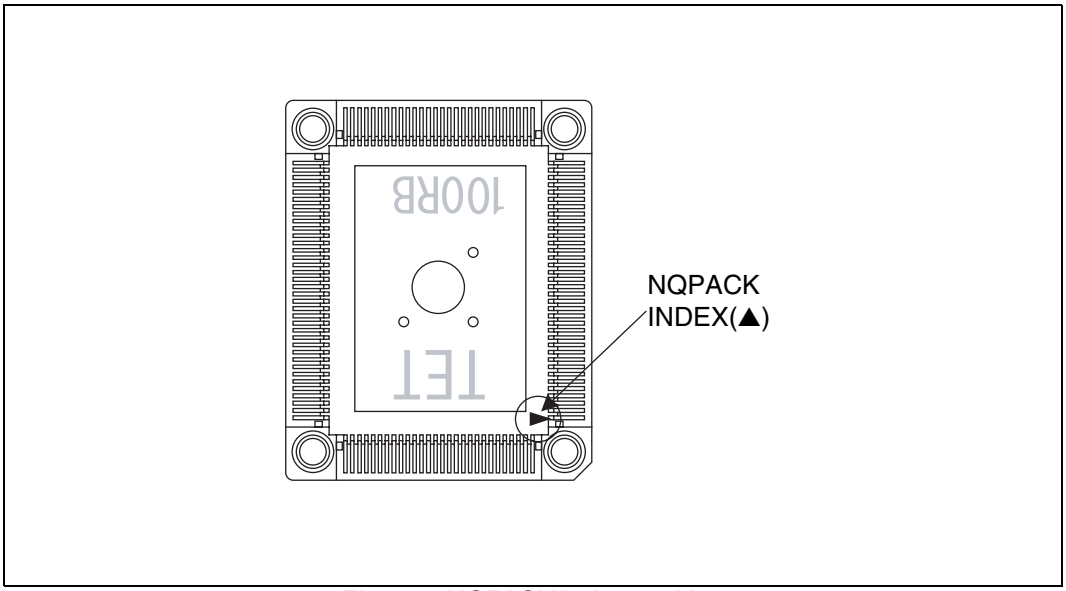

Figure 3 NQPACK index position

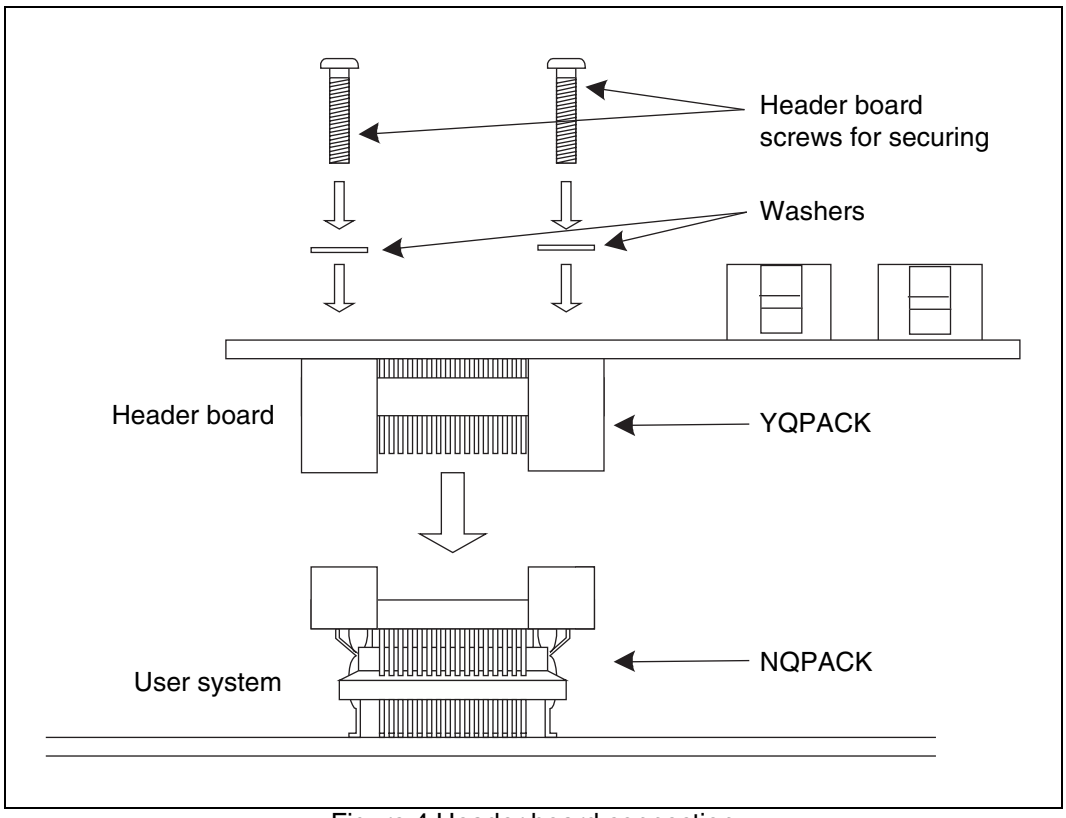

Figure 4 Header board connection

■ Disconnection

To disconnect the header board from the user system, remove all four screws, and then pull the header board straight out of the socket.

5. Mounting Mass Production MCUs

■ Mounting

After mounting a mass production MCU on the user system, use the supplied IC socket cover.

1. To mount a mass production MCU on the user system, match the index mark (▲) on the NQPACK mounted on the user system with the index mark (●) on the mass production MCU.
2. Confirm that the mass production MCU is correctly mounted on the NQPACK. Next, insert the HQPACK into the NQPACK (see Figure 5).
   The pin of HQPACK is thin and easy to bend. Insert NQPACK after confirm that the pin of HQ-PACK is not bent.
3. Insert each HQPACK screw for securing in each of 4 screw holes on the socket cover, and then first tighten the screws in opposing corners followed by the two remaining screws.
   To tighten the screws, use the special screwdriver supplied with the NQPACK to finally tighten the four screws in sequence. Tightening the screws too tight might result in a defective contact.

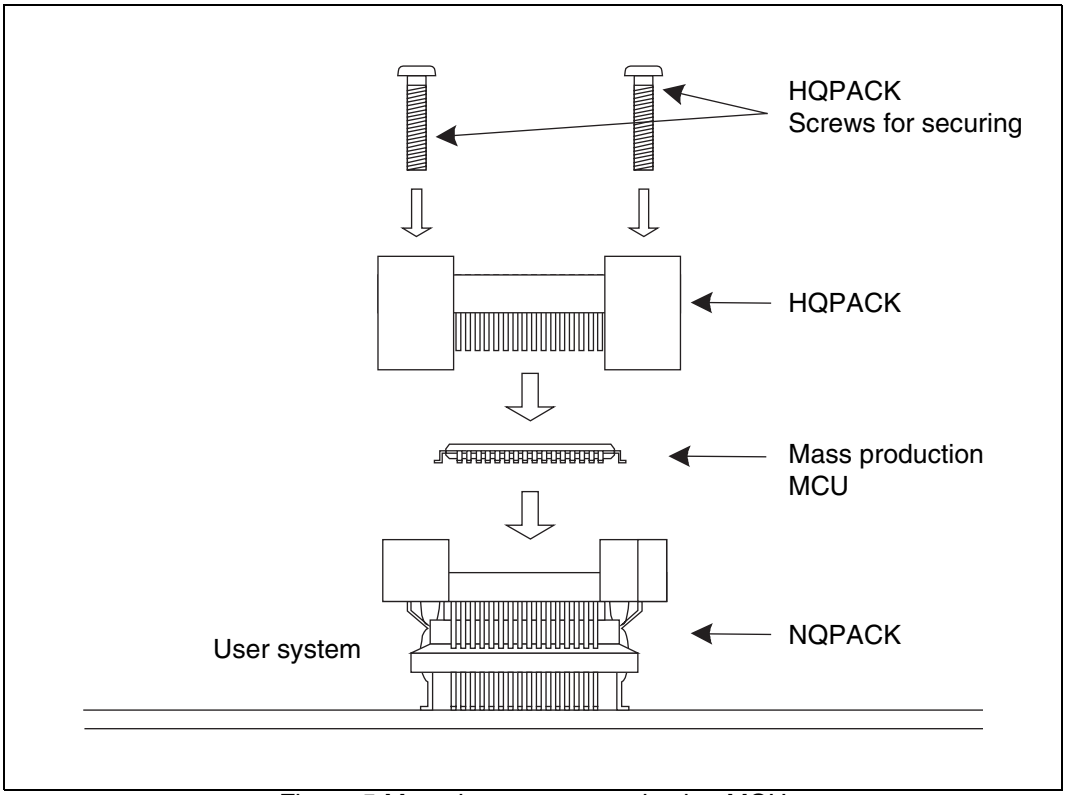

Figure 5 Mounting a mass production MCU

■ Disconnection

To remove the HQPACK, remove all four screws, and pull the HQPACK straight out of the NQ-PACK.

SS01-71089-1E

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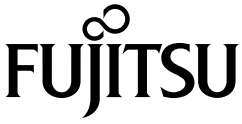
April 2008 the first edition

Published **FUJITSU MICROELECTRONICS LIMITED**

Edited Strategic Business Development Dept.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